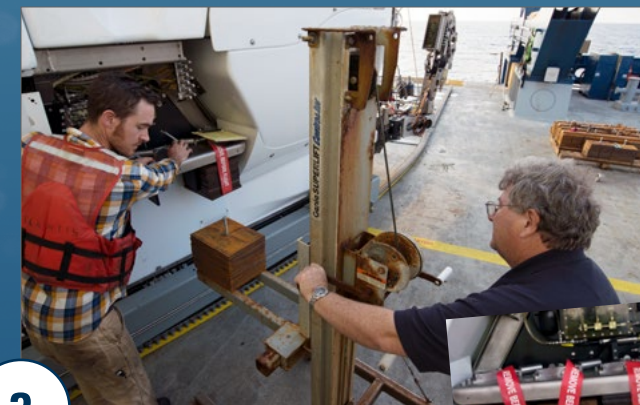


Ready, Set, Dive

THE DAILY DANCE TO DEPLOY ALVIN *by Cherie Winner & Lonny Lippsett. Photos by Chris Linder*

1

About 6 a.m., the *Alvin* Operations Group begins pre-dive checks. “We’re swarming around the submarine like ants,” said engineer assistant and pilot-in-training Jefferson Grau. Group members check all systems that contain oil to make sure there’s no air in them. The oil keeps parts from collapsing at the high pressures of great depth. They polish windows and lights, disconnect battery charging cables, and switch the vehicle to battery power. Inside the sub, they check electrical circuits, emergency supplies, and the ballast system.



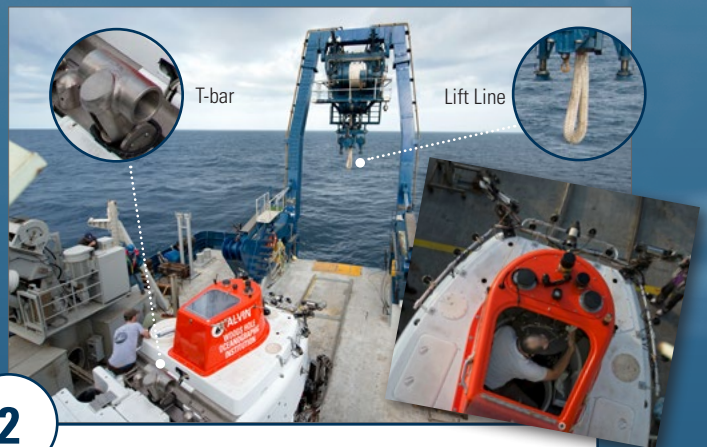
3

Engineers load three stacks of iron plates on each side of the sub. The plates’ weight helps *Alvin* descend. When the sub is ready to surface, pilots jettison the plates to make the sub lighter, and its buoyant foam allows it to rise. Their release mechanism is secured by pins, so if a release is accidentally triggered while aboard the ship, the weights will stay put. Each pin carries a red warning flag.



2

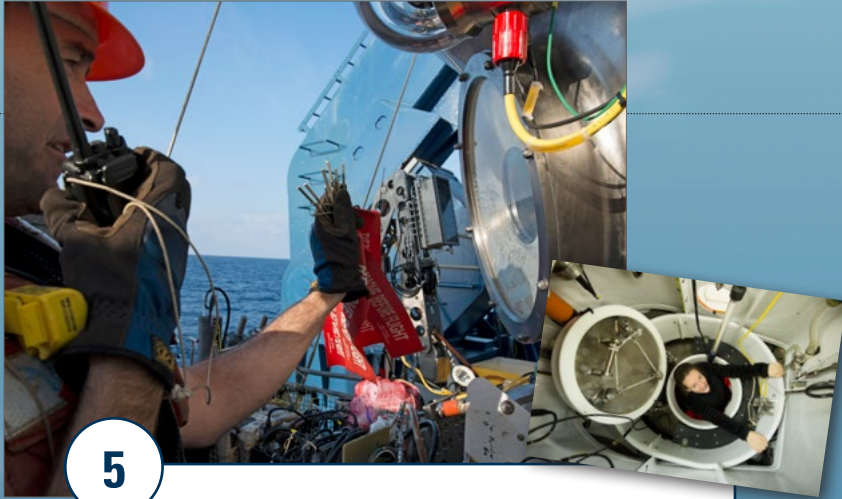
Alvin is rolled on a railroad track out of its hangar and onto the deck. An engineer in the sub’s sail cleans, inspects, and greases the personnel sphere’s hatch to ensure it will seal properly.



4

The sub is rolled under the massive A-frame at the stern of the research vessel *Atlantis*. The launch coordinator talks with the captain and the A-frame operator (who has checked the equipment that will lift the sub). Launch crew attaches a heavy lift line to a titanium T-bar on *Alvin* and a smaller line to a hook farther aft so the sub won’t rotate during the lift.





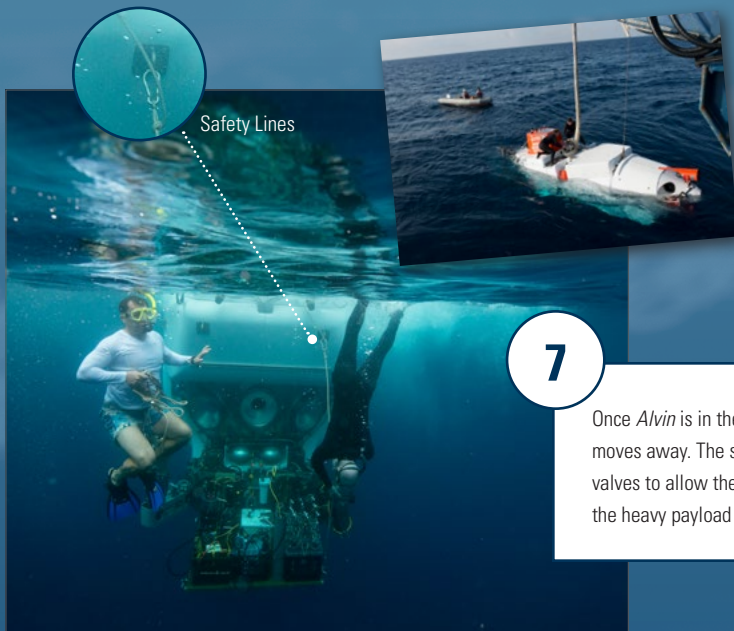
5

The pilot enters the sub, checks systems, starts the oxygen flowing in the sphere, and makes sure the CO₂ scrubber is working. The launch coordinator removes all six pins securing the weight releases and shows the flags to the pilot to assure him he will be able to drop the weights when it's time to return to the surface. Two observers enter the sub and the pilot closes the hatch, sealing the sphere.



6

The launch coordinator, A-frame operator, and ship's captain coordinate to lift the sub, move it out past the ship's stern, and lower it into the water. Two 'swimmers' ride on top of *Alvin* to make sure lines don't tangle.



7

Once *Alvin* is in the water, swimmers remove the lift and tail lines, and the ship moves away. The swimmers turn on *Alvin's* emergency locator light, open ballast valves to allow the sub to submerge, and remove the safety lines that support the heavy payload basket in front of the sub when it is out of the water.

8

The pilot makes sure the oxygen supply and CO₂ scrubber are working and calls the captain for permission to dive. "We wish them a fond farewell and we'll see them at dinner, and we watch the sub go under," said Grau.

